

## **A STUDY ON BIG DATA AND IOT TO LEVERAGE THE SUPPLY CHAIN MANAGEMENT WITH SPECIAL REFERENCE TO BIG BASKET**

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### **ABSTRACT**

Big basket is considered to be one of the backbone for the economy and it contributes the major part towards the GDP of the country. In recent era the technology has an impact towards the growth of big basket around the country where IOT has the key role towards enhancement of technology among big basket. Though the productivity has been increased the implementation of optimized technology with big basket is questionable. Hence the main objective of the study is to analyse the impact on technology Industry 4.0 among small/ mediumfirms and for this purpose a sample of 7 companies were taken in to decision making process. The conclusion is that the crucial role of IOT practices and techniques on the establishment of a sustainable competitive advantage is based on Supply Chain Management. Therefore, maximizing IOT investment could lead firms to higher profitability and effectiveness.

**Keywords:** Supply Chain Management, IOT and Big basket.

### **INTRODUCTION TO THE STUDY**

Grocery stores are not willing to fall behind as internet trading becomes more popular. With ecommerce transforming the entire world, a slew of new online grocery stores have sprung up to meet the need. However, not all of them have been able to weather the e-grocery industry's ups and downs. Our very own Bigbasket is one such brand name that has risen like a phoenix in recent years.

Over the course of a few years, Bigbasket has grown to become one of India's largest supermarkets. Having this app on your device allows you to do your grocery shopping from the comfort of your own couch. The e-grocer relieves clients of the need to physically visit grocery stores, saving them time and effort.

They are ready for our groceries to arrive at our door with only a few taps on our devices. Currently, the company operates out of offices in Mumbai, Bangalore, and Hyderabad.

To streamline logistics and improve customer experience, Bigbasket employs Artificial Intelligence, Machine Learning, and analytics.

Getting the most important information out of unstructured data

The Bigbasket team is tasked with dealing with a large amount of unstructured data. This information is gathered through analysing customer online habits and interpreting transaction records. As a result, customer analytics aids in the company's understanding of the relationship between delivery matrix and customer loyalty.

### **2. Using analytics to enable personalization**

The analytics team's goal is to improve and personalise the customer experience by providing a variety of solutions. It also aids in the detection of customers as well as the enhancement of engagements such as communications and offers. Analytics aids in the analysis of client behaviour so that the organisation can personalise its offerings accordingly.

### **3. Using predictive analytics to reduce inventories in flux**

Predictive analytics ensures that the company does not run out of goods or overstock. This method entails forecasting demand, which will improve the supply chain team's planning abilities for drivers, vans, CEEs, and other equipment used at multiple locations. It also aids in the examination of a wide range of orders and volumes so that the supply chain team can strategize appropriately.

### **Bigbasket's IoT strategy**

Bigbasket also uses IoT-powered applications to ensure the quality and freshness of products such as fruits, vegetables, and other grocery items.

Various challenges must be overcome when delivering fresh things from the warehouse to the customer's doorstep, such as maintaining the proper temperature of the product or segregating hot, frozen, or cold items.

The Internet of Things programme assists in understanding item information to ensure that it is packed in the correct container and in balancing the varied temperatures of each individual item during the journey from the warehouse to the final delivery location.

Bigbasket has also used Artificial Intelligence and Machine Learning as a technology.

According to Subramaniam in an interview, the company has invested in Artificial Intelligence and Deep Learning to develop smart kiosks known as "BB immediate."

These kiosks are essentially smart machines that are connected to the internet via an app. The customer goes to the machine and uses the app to place their order. The consumer can then walk away with the cart items while the invoicing is handled by a cashless domain, in which the user receives the bill via the app and has numerous payment choices.

The AI system has built-in recognition capabilities that use picture scanning principles and advanced deep learning solutions to detect the purchased objects. The system interprets the customer's needs and provides the appropriate product, as well as handling the availability and invoicing processes.

Bigbasket focuses on machine learning as well as analytics to ensure timely delivery. In order to pack numerous order sets, the delivery process is now started by recognizing common routes and vehicle status.

The team gathers information about the optimal route, the number of vehicles required on a certain route, and current traffic conditions from a range of data sources in order to start a flawless, timely delivery. The Machine Learning-driven model evaluates real-time scenarios as well as customer requirements through useful data sources. The concept helps with multi-level picker tracks, reverse pickers, scheduled deliveries, and so on.

#### **STATEMENT OF PROBLEM**

Typically the emerging brand-new technologies are generally creating tactical opportunities to the organizations to develop competitive strengths in various well-designed areas of control including logistics and supply archipelago management. Even so the degree of good results depends on picking a right system for the app, availability of suitable organizational system, culture plus management guidelines. In logistics, information, interaction and automation of tasks technologies possesses substantially enhanced speed with identification, files gathering, handling, analysis and even transmission, with good level of accuracy and reliability and trustworthiness. Technology can be a means to enrich business competition and performance. The idea plays a serious role throughout success for supply stringed by increasing the overall efficiency and productivity of the logistics system. Throughout logistics innovative technologies are widely-used in designed country when playing in India adopting process is incredibly slow. On the other hand due to liberalization of the Indian economy typically the competitive force is gathering and the merely option to confront the competition towards go in for concept enabled surgical procedures. The main problem of the study is related to usage of the latest technologies being used in the companies.

#### **OBJECTIVES OF THE STUDY**

- To study about the profiles of the companies taken for the study.
- To analyse the technology used with the company.
- To study about the adoption of technology with the company.

#### **SCOPE OF THE STUDY**

The actual scope from the research is restricted only to practical area duties for provide chain versatility and recognition towards numerous technology combined with Big basket. The research will help Big basket the collect information about the most recent technologies utilized towards Info sharing/communication which may be used with their own companies within upcoming times.

#### **IMPORTANCE OF THE STUDY**

The value of the study is a result of the two significant variables the idea aims to gauge (IT along with SCM performance), adding the value of the field on the study. the significance of the study about the practical levels.

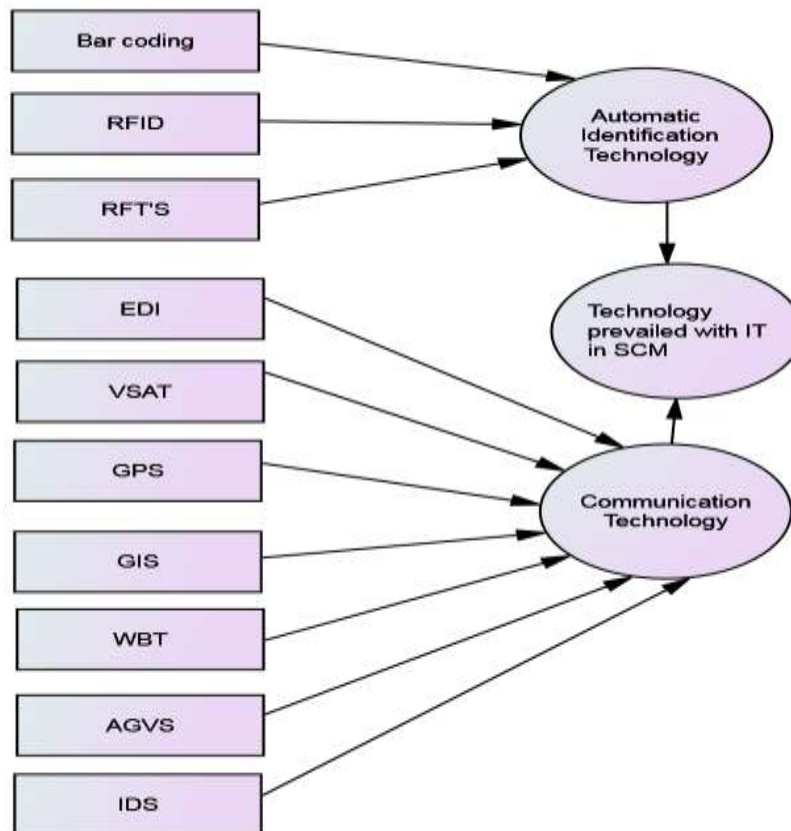
The studies of the learn expected to slowly move the researched companies towards applying (IOT) intended for enhancing their very own supply sequence performance to accomplish business good results and a great deal better strategic location. This research will assist the qualified companies to learn how to get a cut-throat advantage by the best using technology to take cost and provides high quality of goods and companies. This review will street address the magnitude to which this kind of pattern (IOT) affects the availability chain functionality, and also it can determine by far the most influenced proportions.

#### **NEED OF THE STUDY**

In the past few decades the world was witnessing a huge revolution in computing and telecommunications, and there are no predictions that this revolution will stop in a while, this rapid changes motivate leaders among organizations to think of establishing best policies to adopt technology in an efficient and effective way in order to

enhance the organizational performance. It is widely recognized that a “information technology” is the most important building block for most organizations to survive and compete with other organizations. Information is life blood of every organization, the current organizations needs accurate and immediate and comprehensive information. For long time it was addressed the importance of getting the right information at the right time in order to improve decision making process at all levels within the organizational context (Beynon-Davies 2009). Seeking efficiency in supply chain management is combined with choosing the most appropriate and costly effective transportation means and channels, while using IOT in supply chain management is considered an important tool to enhance over all organizational performance as it assists the organization to build an accumulative knowledge about customers, suppliers, distributors, and main channels (Fasanghari et al. , 2008). The need of the study is to analyse the impact of technology towards supply chain management.

### CONCEPTUAL FRAMEWORK



### RESEARCH METHODOLOGY

**Type of research:** Descriptive research has been taken for the study

**Data Collection:** The data collected for the study includes primary and secondary data.

**Primary data:** The primary data was collected from the respondents through questionnaire.

**Secondary data:** The secondary data was collected from company’s publication in the form of annual report, Journal publication, Government report and academic research findings are also taken into consideration for this present study.

**Sample size:** The researcher has selected 7 as the sample size.

**Tools used for the study:** Multiple Regression

### LIMITATIONS OF THE STUDY

- The sample size is limited to seven companies.
- There may be bias towards the data collected from the companies

**ANALYSIS AND INTERPRETATION**  
**INFORMATION RELATED TO ICT ADOPTION PROCESS**  
**Ortel Eletronics Pvt Ltd**

The company was established in the year 2009 as a manufacturing unit in Delhi and they are manufacturing premium quality of LED Lantern, Power Bank, AUX Cable, Mobile Battery, Data Cable, Mobile Adapter, Emergency Light and more products.

They are also backed up with advanced infrastructure unit for smooth production process. The company is been governed by Mr. Ravi Kant Gupta.

Information	
Total Number of Employees	26 to 50 People
Legal Status of Firm	Private Limited Company
Annual Turnover	Rs. 2 - 5 Crore
Type of Adoption process with the company	Fully automated
Kind of technology used	RFID and Bar coding
Areas implemented	Customer end
Implementation of ICT adoption process with the company	From beginning
Benefits related to ICT adoption process with the company	Productivity, Speed, Quality, overcoming competitors, speeder communication
Interest in further adoption	Yes
Reasons for ICT adoption in future	Increase speed and increase quality

**GRMS**

GRMS, Inc. was started in the year 1981 as a division of a New York based manufacturer. Its charter was to develop and implement a fully integrated, closed loop, manufacturing system for its parent organization.

The success of this venture led to a decision to market the software, GMS, to the manufacturing industry. GMS possesses functionality, ease of use and implementation tools developed by a group of manufacturing professionals with data processing skills.

Information	
Total Number of Employees	45-60 employees
Legal Status of Firm	Incorporation
Annual Turnover	Rs. 8 - 12 Crore
Type of Adoption process with the company	Semi automated
Kind of technology used	GPS
Areas implemented	Logistics
Implementation of ICT adoption process with the company	On year before
Benefits related to ICT adoption process with the company	Speed and Productivity
Interest in further adoption	Yes
Reasons for ICT adoption in future	Better waste reduction and Productivity

**Nirvan**

The company is a supplier of New Year Greeting Cards. Quality being the main concern, they offer varied range of new year greeting cards that is durable in nature. The greeting cards are available in various sizes, designs and patterns.

Information	
Total Number of Employees	15-45 employees
Legal Status of Firm	Proprietor
Annual Turnover	Rs. 2 - 4 Crore
Type of Adoption process with the company	Semi automated
Kind of technology used	RFID, Bar coding
Areas implemented	Production unit
Implementation of ICT adoption process with the company	On year before
Benefits related to ICT adoption process with the company	Efficiency and Productivity
Interest in further adoption	Yes
Reasons for ICT adoption in future	Volume and productivity

**Hydenso**

HYDENSO steel and Engineering Pvt. Ltd was established in April 2009 with its registered office at Wise Park , Kanjikode, Palakkad , Kerala. The factory is setup in the strategic position and the heart of the industrial area with 6000sqm of land and 2700sqm of build up area. HYDENSO is a state of the art manufacturing facility for sheet metal components and enclosures to the international standards together with an in house surface finishing facility and well equipped assembly area. They are manufacturing Power Control Center (PCC), Main Switch Boards, Motor Control Centers, Auto Mains Failure ( AMF) Panels, Fire Fighting Panels, SCADA integration panels, PLC Controlled Panels, External Use IP-65 Panels, Bus Duct, Control Desks, Stainless Steel Panels, Automatic Power Control Panels, Sub Distribution Boards, UPS Power Panel, DG Synchronizing Panels, Customized Panels, Enclosures and Enclosures.

Information	
Total Number of Employees	20-25 employees
Legal Status of Firm	Proprietor
Infra structure	Fabrication Shop (700 m), Surface Finishing Shop (1000 m) and Assembly and Testing Shop [1000 sqm]
Annual Turnover	Rs. 4 - 5 Crore
Type of Adoption process with the company	Fully automated
Kind of technology used	RFID, Bar coding
Areas implemented	Production unit
Implementation of ICT adoption process with the company	Recently
Benefits related to ICT adoption process with the company	Speed, Productivity, efficiency
Interest in further adoption	No
Reasons for ICT adoption in future	Capacity fulfilled

**Prince T M T Steels Private Limited**

Prince T M T Steels Private Limited is a Private incorporated on 14 January 2005. It is classified as Non-govt company and is registered at Registrar of Companies, Ernakulam. Its authorized share capital is Rs. 40,000,000 and its paid up capital is Rs. 19,500,000. It is involved in Manufacture of Basic Iron & Steel. Directors of Prince T M T Steels Private Limited are Anish Sha Thooppely Kunju Mohammed Abdul Karim, Thooppely Kunju Mohamed Abdulkarim, Anub Sha and Ahmed Faizal Sha.

Information	
Total Number of Employees	15-35 employees
Legal Status of Firm	Proprietor
Annual Turnover	Rs. 14 - 15 Crore
Type of Adoption process with the company	Semi automated
Kind of technology used	RFID, Bar coding
Areas implemented	Whole industry adopted
Implementation of ICT adoption process with the company	1 year before
Benefits related to ICT adoption process with the company	Increasing responsiveness and speed
Interest in further adoption	Yes
Reasons for ICT adoption in future	If industry/ technology changes then there will be a positivity towards manpower, waste and quality

**United Rubber Industries**

Established in 1976 by exemplary visionary and co-founder of United Rubber Industries India private Limited Mr. Ajit Rai, URI has grown from a start up enterprise to one among the leading manufacturers of rubber components in India.

Today, URI has established itself as an established strategic source for all sophisticated and hi-tech applications with rubber. Over the past 40 years we have carved a niche market for ourselves as a world class manufacturer of rubber components that always steers itself ahead of the industry's expectations.

Information	
Total Number of Employees	1000 employees
Legal Status of Firm	Proprietor
Annual Turnover	Rs. 14 - 15 Crore
Type of Adoption process with the company	Semi automated
Kind of technology used	GPS
Areas implemented	Logistics
Implementation of ICT adoption process with the company	8 months before
Benefits related to ICT adoption process with the company	No change
Interest in further adoption	Yes
Reasons for ICT adoption in future	Increase speed and increase quality

#### **Deepee industries Limited**

Over the years "Dee Pee Industries" mark has built immense reputation based on the quality & reliability of spares. There are many factors that make Dee Pee Industries unique in replacement market that is Quality, Reliability and Service. With several inferior parts in the replacement market, the customer may not always be making the right choice .a poor product can affect the performance of any machine.

#### **FINDINGS**

There is a positive relation between Automatic Identification Technology (AIT) and Bar coding used with the manufacturing companies and the technologies RFID and RFT's don't have any impact towards (AIT).

The technologies GIS, WBT, AGVS and IDs have positive impact towards communication technology were as EDI, VSAT and GPS have negative impact towards Communication Technology (CT).

Automatic Identification Technology (AIT) don't have impact towards technology prevailed with IT in SCM but Communication Technology (CT) has a positive impact towards technology prevailed with IT in SCM.

#### **SUGGESTIONS**

- Awareness of information technologies is very important for manufactories for the purpose of using it and to gain the advantages of SCM.
- The manufactories should use information technologies for saving labors time utilizing the working hours in a better way to supply chain performance.
- Business strategies can be represented for long-term goals and action plans of an organization's top-management in response to external forces of change with technology.
- The awareness towards communication technology can be created and training cab be given to the employees regarding the updation of technology.

#### **CONCLUCSION**

In order to assess the competitive value of IOT techniques and methods for SCM the study has been made. The conclusion is that the crucial role of IOT practices and techniques on the establishment of a sustainable competitive advantage is based on Supply Chain Management. Therefore, maximizing IOT investment could lead firms to higher profitability and effectiveness.

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